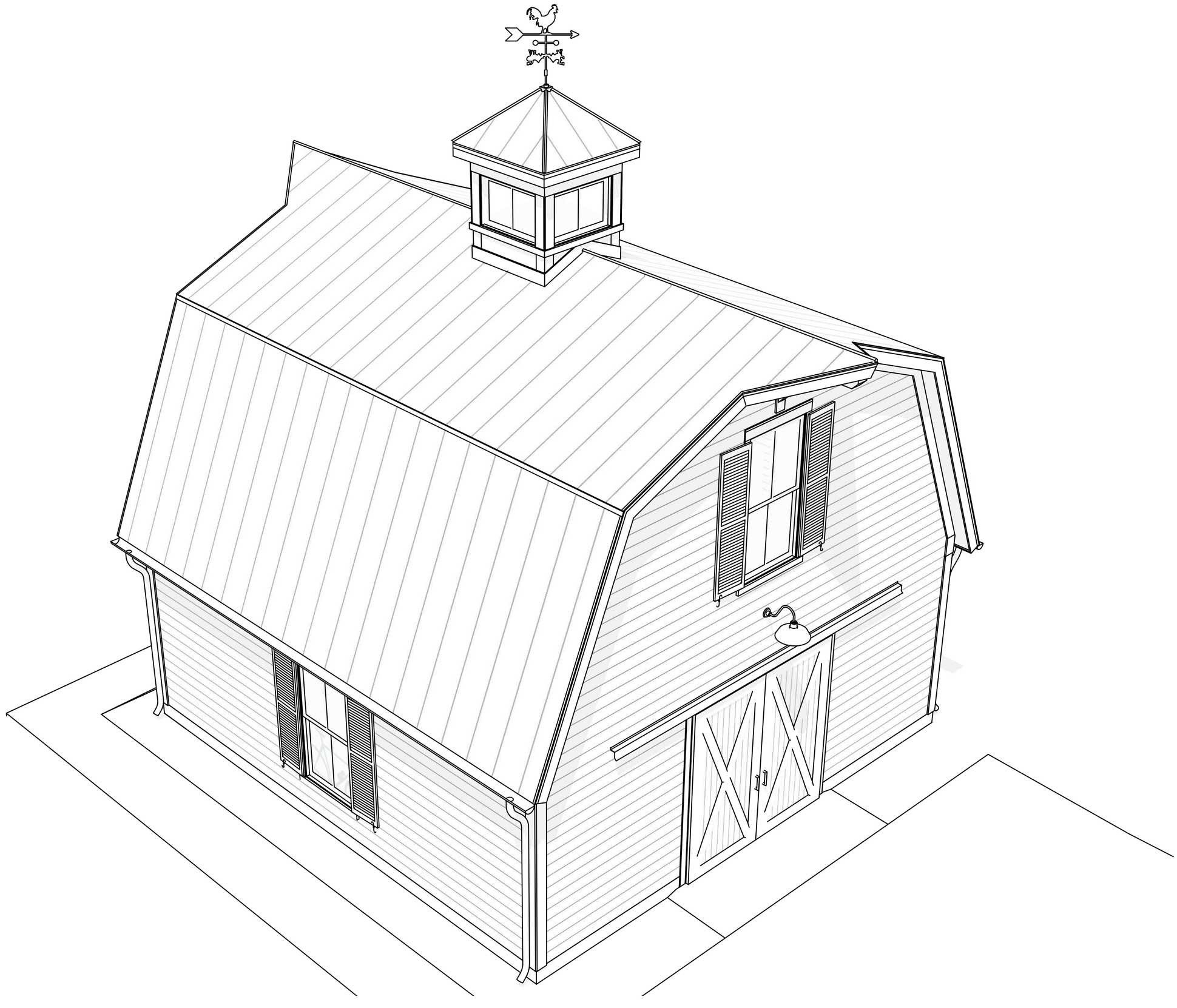


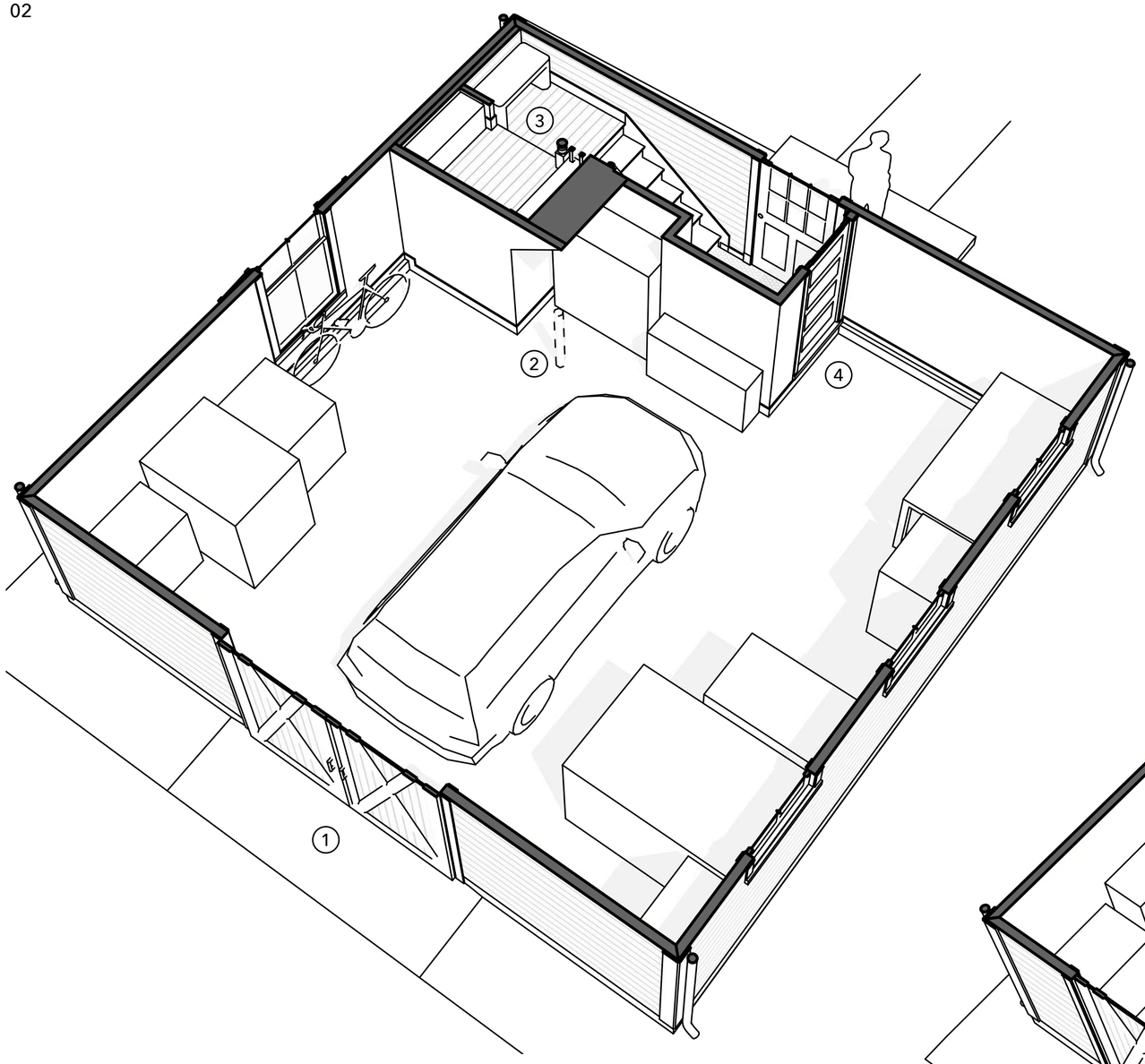
THE BARNHOUSE

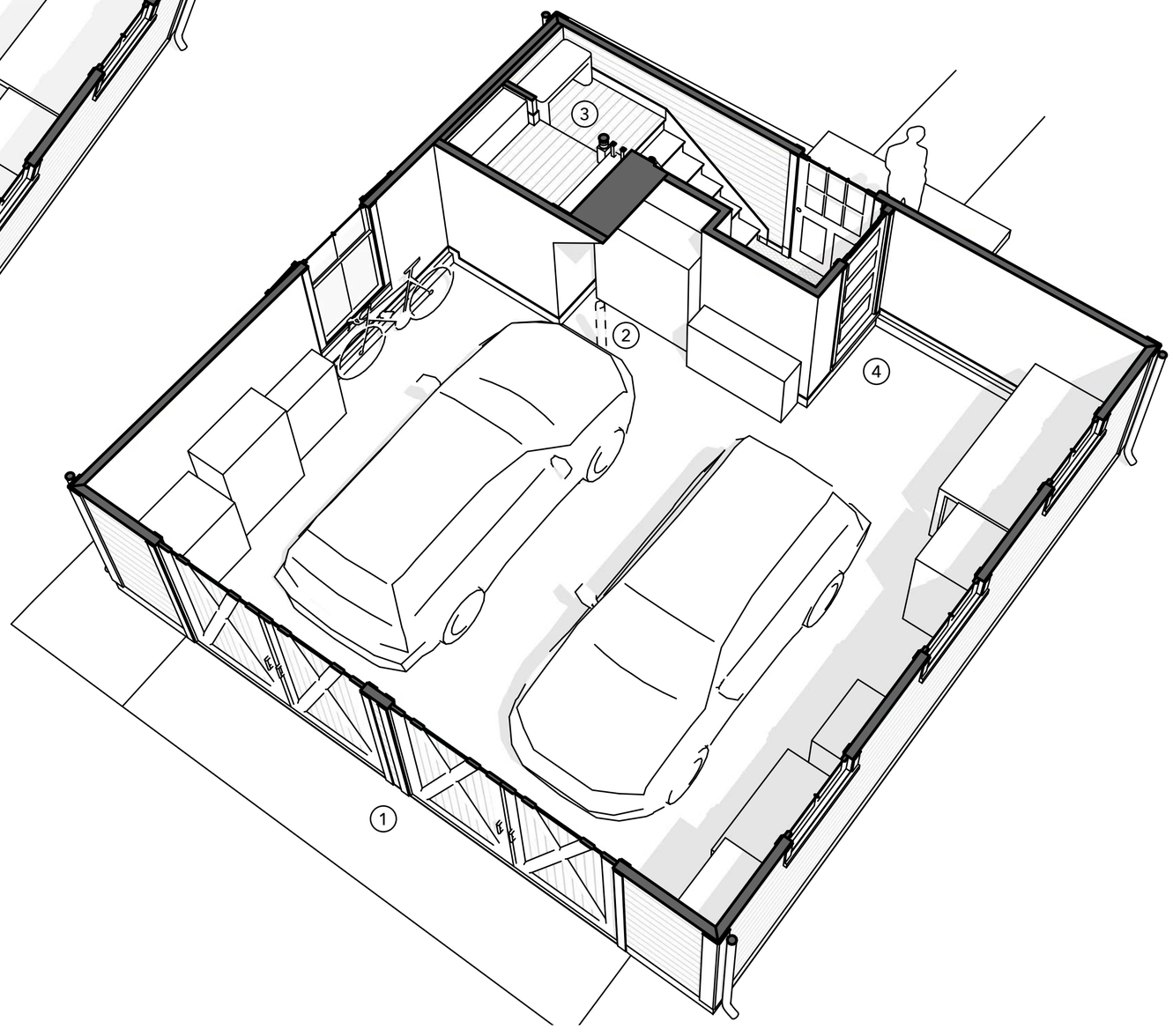
PROJECT OVERVIEW

A DESIGN BY JAY OSBORNE

In the shape of a country barn, the Barnhouse includes a residence over a garage. As a carriage house, it can have countless functions. It can be a guest cottage, a temporary home for renovating a primary house, a live-work unit with a shop below, an art studio, a granny flat, a rental used to make a side income, or a starter home. This functional diversity lets the barnhouse work well with my other house designs.

In contrast to the warehouse-like “barndominium” houses that have recently been littering the American countryside, the Barnhouse is designed to be cute, well-crafted, and compact– as efficient as the iconic barns that inspired it. With options for either a one-car or 2-car garage below, it appears a bit inconspicuous on the outside, but the interior upstairs apartment has a grand vaulted ceiling.





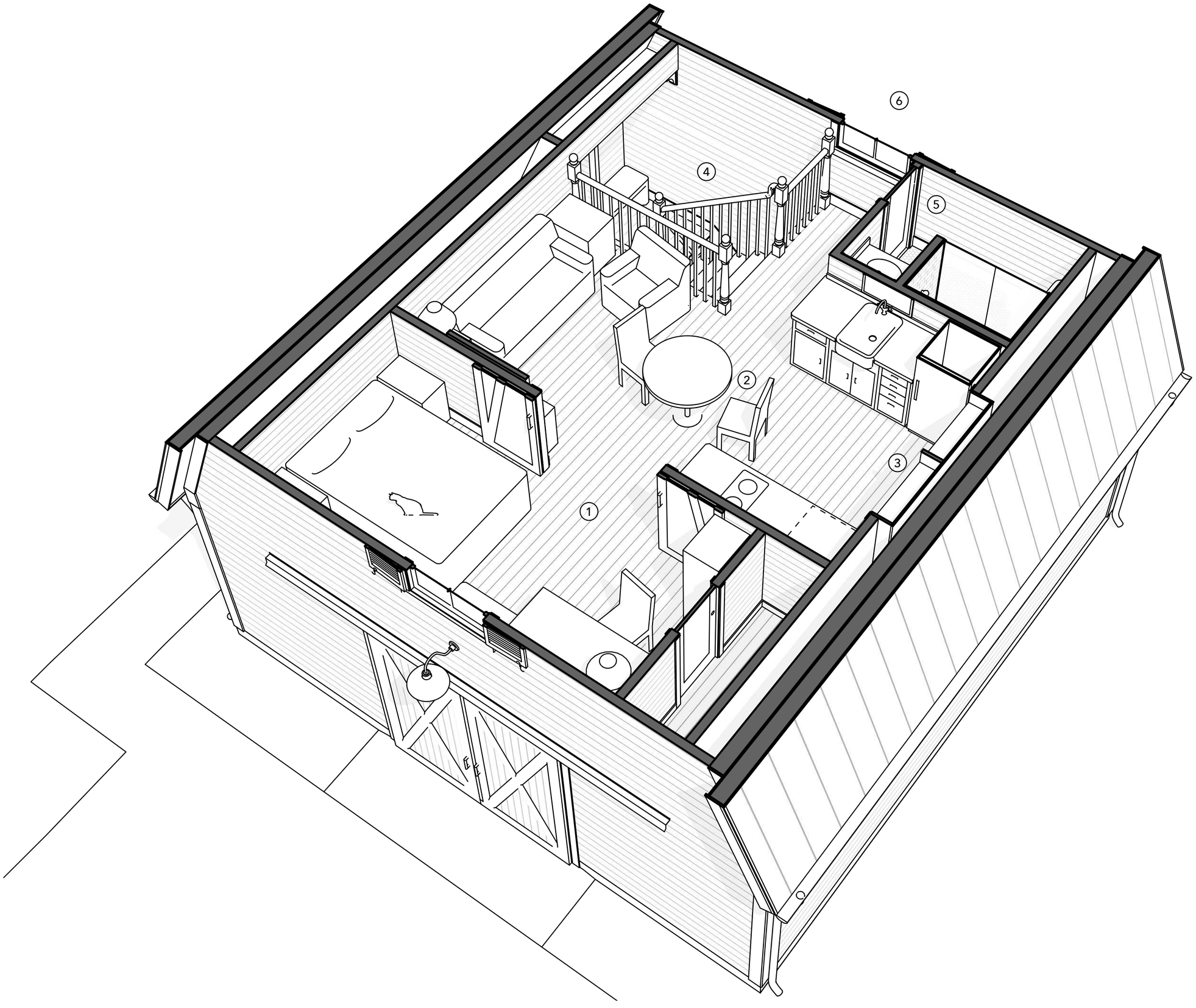
With a footprint of only 24x24 feet, there's enough space for either one or two cars below. The garage entry is on the opposite side as the residential entrance. **(1)** The one-car option has sliding barn doors, perfectly fitting the look. The two-car option has casement doors. Any set of doors can be horizontally segmented and converted to roll-up doors. **(2)** Under the staircase, the ceiling gets fairly low.

THE BARNHOUSE

FIRST FLOOR

A DESIGN BY JAY OSBORNE

A bollard or other obstacle may be required where the ceiling is only 6'-4" high. **(3)** The middle landings of the staircase have nooks for taking off shoes (a bench) and for hanging coats. **(4)** The door from the residence to the garage can be omitted. Building codes then allow a studio apartment upstairs (no enclosed bedroom). Yet this door would be very desirable if the garage were a workshop.



The upstairs apartment is about as small as a one-bedroom unit can be. Separate rooms allow more privacy, often necessary for two people to peacefully coexist. Room-based layouts also permit a clear separation of uses, reducing distractions.
(1) The bedroom has barn door which could be open most of the time. Building codes require these bedroom doors since this apartment opens to the garage.

THE BARNHOUSE

SECOND FLOOR

A DESIGN BY JAY OSBORNE

(2) The dining table is situated directly under the cupola. With light from above, it also has a view out toward the windows, increasing the feeling of spaciousness.
(3) The low kitchen wall has built-in shelving for cans, bottles, and cereal boxes.
(4) The bathroom has no window itself, but its door and transom are next to one.
(6) The upstairs has only two windows on opposite walls. As efficient as possible.

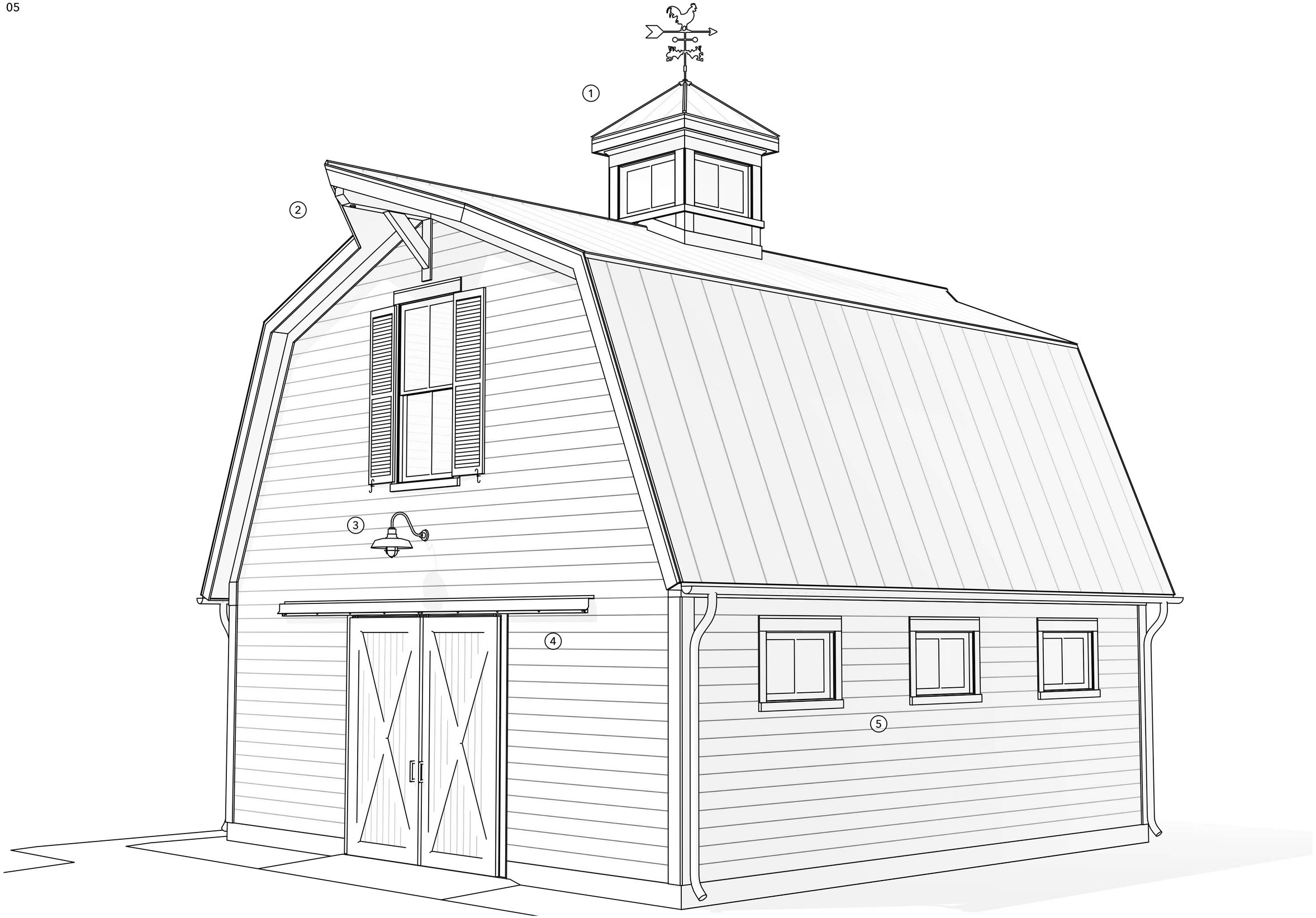
THE BARNHOUSE

ENTRY TO RESIDENCE

A DESIGN BY JAY OSBORNE

The Barnhouse is designed to look great in the background. It's not meant to be flashy. It's iconic yet humble, elegant yet cute. **(1)** The front entry is on the opposite side as the garage, for a better sense of autonomy. The residence can be used by different people than those who use the garage. **(2)** The roof peak projects outward. Old barns used to have cranes built in. It also has other uses.

(3) The cupola has operable windows. They allow for better air circulation. Old barns usually had these, but sometimes only with louvered vents. Like a cherry on top, this cupola becomes the visual terminus of the architectural composition. **(4)** Gambrel eaves sometimes flare out at the bottom, to send rain away from the wall. Yet this one has a fairly low wall and a gutter. So it's simpler.



(1) The cupola has a weather vane (with the classic cockerel). This is obviously a good place for personalization. The windows could be larger, but probably not by much. These would be awning windows, like on the side wall. **(2)** The crane can either be integral to the primary structure, or be a bracket that only supports the roof ridge projection (called a “widow’s peak,” “hay hood,” or “crow’s beak”).

THE BARNHOUSE

1-CAR GARAGE OPTION

A DESIGN BY JAY OSBORNE

(3) A gooseneck lamp also is a fitting addition to a classic American barn design. **(4)** With an opening for only one car, you can have the quintessential barn door. The sliding track above has a strip of flashing to keep the hardware from rusting. **(5)** The three clerestory windows distribute sunlight across the garage. The sills are high enough for privacy, and also gives space for shelving and other storage.

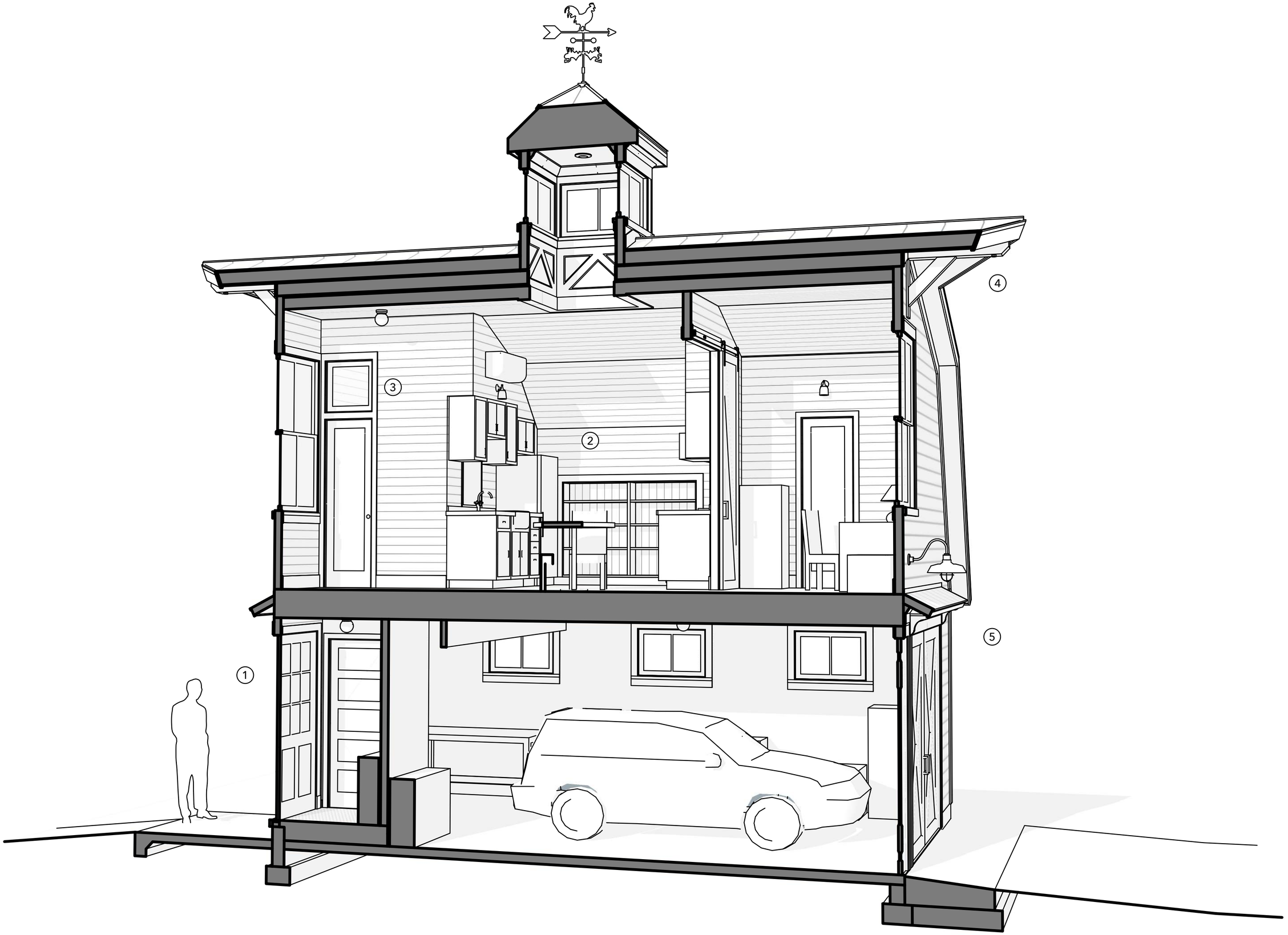
THE BARNHOUSE

2-CAR GARAGE OPTION

A DESIGN BY JAY OSBORNE

(1) With 2 sets of garage doors, they would have to be either hinged on their sides or horizontally segmented to become roll-up doors. **(2)** An awning roof covers the doors. Such coverings protect the doors and opening from long-term moisture damage. **(3)** Any window shutters should be operable. If not, just don't use them. The shutters, if made more simply, could also allude to a hay loft.

(4) A cupola with only windows is sometimes referred to as a "lantern". Imagine how it appears at night. It's not big enough to be a "belvedere" (like a lookout), so don't try to build a staircase to it. **(5)** This is a gambrel roof. It's one of the most efficient roof types for maximizing space in a relatively small volume. That's why it was often used for barns. A spatious hayloft was a major inspiration for this work.



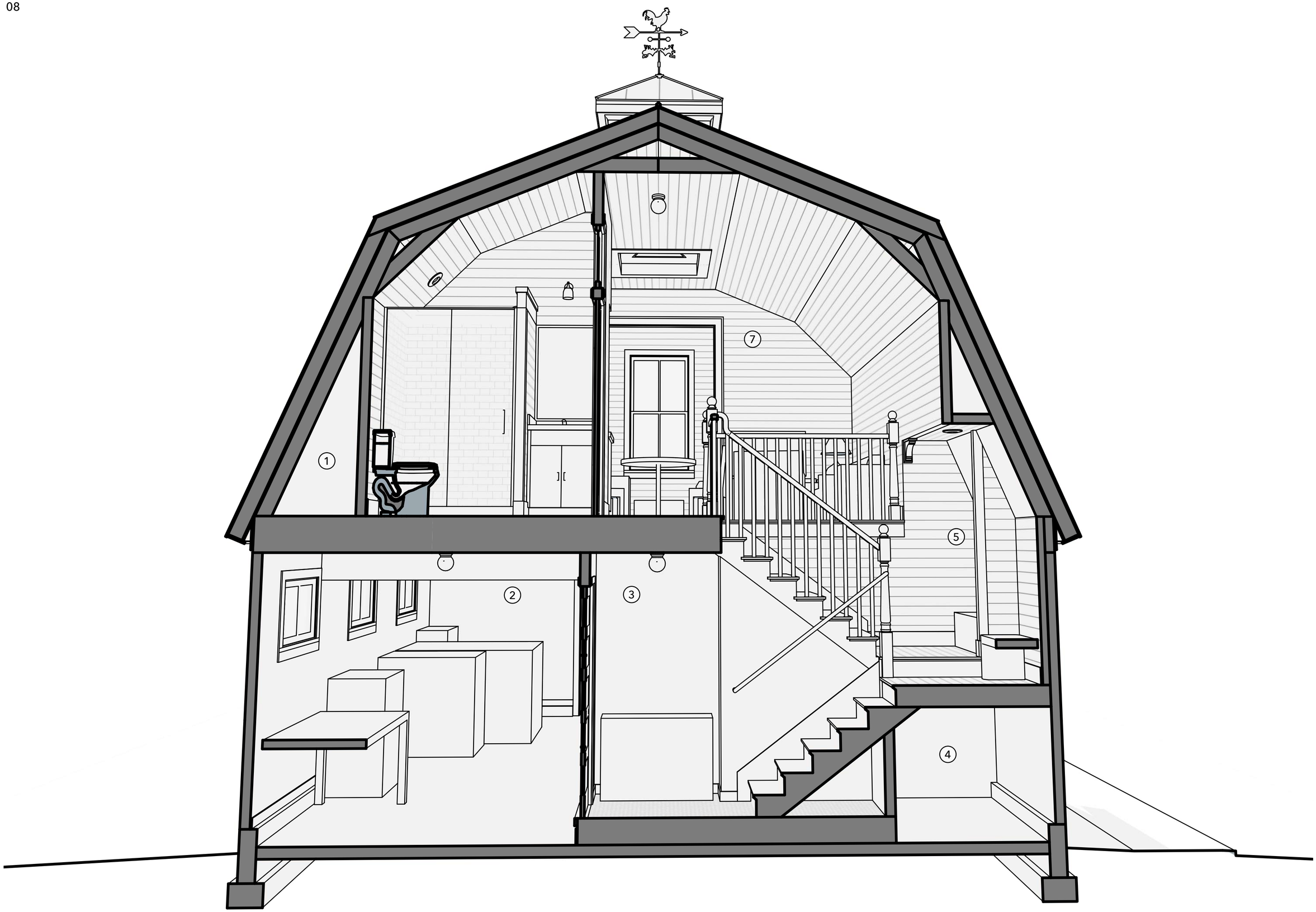
(1) The compactness of the apartment's entry sets up the exploding experience of the tall vaulted ceiling. **(2)** That ceiling is relatively low and human-scaled at the sides, but jumps more than 10 feet high, with a cupola on top of that. The cupola windows let light to cascade down to the living area. **(3)** The bathroom has no exterior window itself, but its transom and door are right next to one.

THE BARNHOUSE

LONG SECTION

A DESIGN BY JAY OSBORNE

(3) The 9' tall barn doors enclose a bedroom and desk area. Probably open most of the time, light and breezes can cross the living room from both sides. **(4)** The cranes could be functional, used for lifting furniture. Or they could hold a hummingbird feeder or windchimes. **(5)** The roof awning of the 2-car garage option can be easy to build (a sloped 3x12 spanning between wooden brackets).



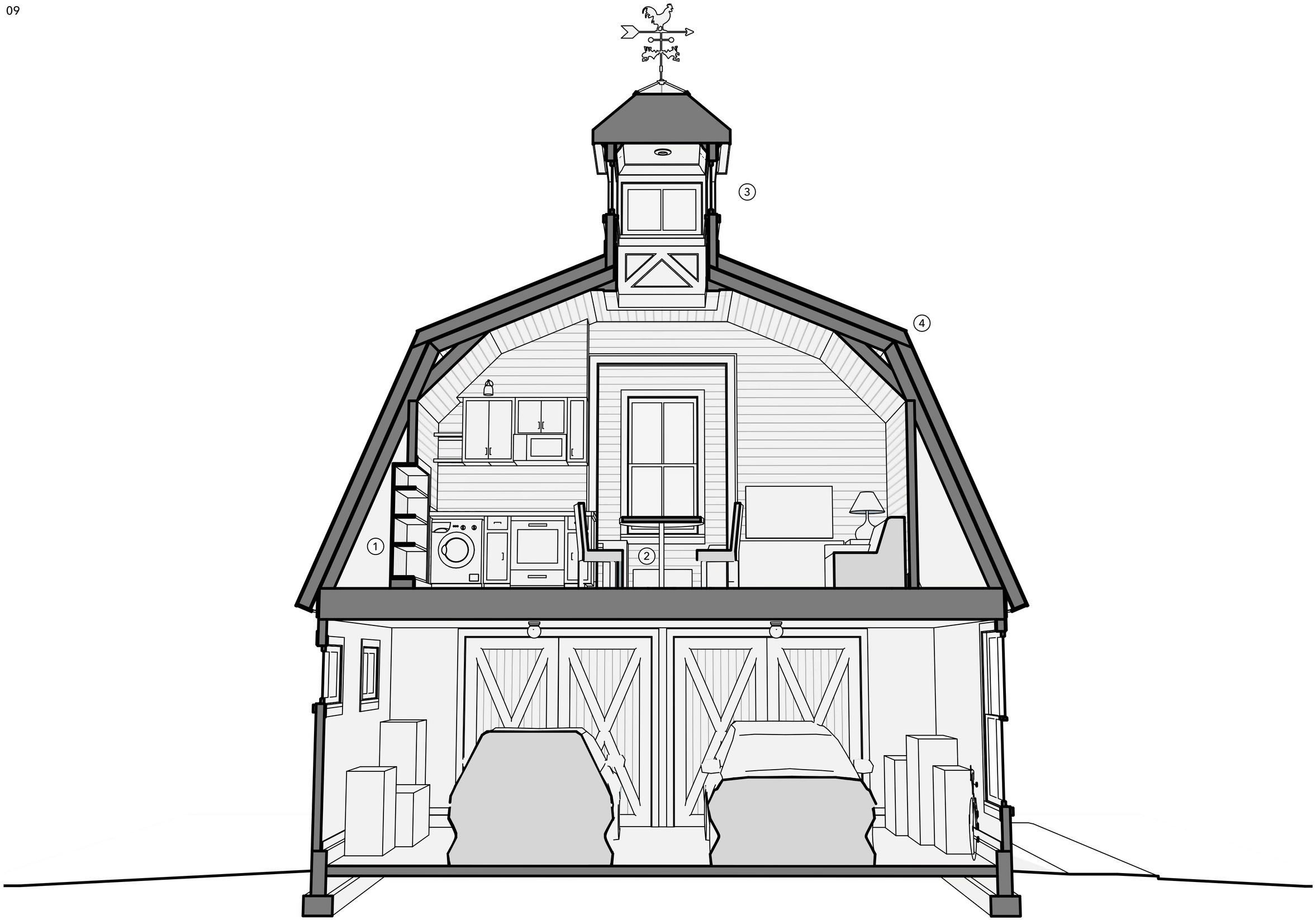
(1) The side areas of the gambrel roof could be used as a utility chase. The roof assembly shows 2x6 structural rafters (with batt insulation) with a layer of staggered sheets of rigid insulation (sandwiched between sheathing). Most barns were obviously uninsulated. An unvented roof assembly is the best option to keep the roof structure as simple and economical as it was in the past.

THE BARNHOUSE

STAIR ENTRY SECTION

A DESIGN BY JAY OSBORNE

(2) The floor structure could be arranged in multiple ways, but must be insulated. **(3)** The residence's entry is compact, in contrast to the expansive space above. **(4)** The low space below the stairs must also be insulated. If it has a small door (not really worth it), then it all must be covered in fire-rated sheathing. **(5)** The middle stair landings have alcoves for a bench (taking off shoes) and for coats.



(1) The side walls are 6’-8” tall– fairly low, but still high enough for most uses. They are loadbearing walls, but headers could be included, allowing for built-in shelving, like this pantry storage at the kitchen. **(2)** The dining table is at the crossroads between the two windows, and centered in the light of the cupola. **(3)** The cupola windows could be opened and closed by using a 10’ long pole.

THE BARNHOUSE

CENTER SECTION

A DESIGN BY JAY OSBORNE

(3) The gambrel is built as a series of collar ties and gussetted plates that brace the rafters. It could instead be built with beams at the nexus of the two roof slopes, spaced roughly 16’ across. That method was more common in the past. The construction system is probably the main consideration for further changes to this design. The unvented roof assembly ideally can allow exposed rafters.